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The Light Infantry Division,
An Operational Force

by

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Infantry

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ABSTRACT

THE LIGHT INFANTRY DIVISION, AN OPERATIONAL FORCE, by Major Edward E. Thurman, USA, 40 pages.

This study provides an analysis of the employment of the light infantry division in a mid- to high-intensity environment. The baseline assumption is that despite being "optimized" for low-intensity conflict, the light infantry division must be prepared for employment into theaters of war where more intense levels of conflict are the norm. An examination of current approaches outlining proposed uses of the light infantry division in a mid- to high-intensity environment is provided which highlights shortcomings in several tactical employment options. Historical precedence providing insight into the potential effectiveness of these options is derived from the operations of Darby's Rangers in WWII. This is followed by a brief investigation into operational uses of light forces during WWII. Specifically, German operations at Fort Eben Emael and Crete are presented. Finally, a proposal for the contemporary employment of the light infantry division is provided which maximizes its capabilities and seeks to minimize the exposure of its vulnerabilities.

Among the conclusions drawn from this study are: the light infantry division can serve as a force multiplier when used operationally in a mobile and offensive manner. The structure of the light infantry division was "optimized" for the wrong mission. It is too light to perform heavy infantry missions yet is too heavy to perform true light infantry missions. Light infantry is a force apart from regular infantry. Its roles and missions are distinct. Augmentation with heavy equipment does not convert it to regular infantry. Selected headquarters within the light infantry division should be considered for elimination from the division organization. Specifically, the division artillery headquarters, air defense battalion headquarters and the engineer battalion headquarters appear to be carry over organizations from the regular division which have minimal utility in the light division. The light infantry division requires increased intelligence gathering and communications capability in order to perform true light infantry missions.

The study concludes that there is a viable need for light infantry divisions but not at the expense of regular infantry divisions. A failure to have sufficient regular infantry divisions will result in a major force shortcoming and the improper substitution of light infantry divisions to perform regular infantry missions.

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TABLE OF CONTENTS

	<u>Page</u>
Section I.	Introduction. 1
Section II.	The Case Against Tactical Defensive 8
	Employment
	Popular Approaches. 8
	General 8
	Approach 1: Replace Armor 8
	Approach 2: Static Defense. 9
	Approach 3: Use as Fillers. 11
	Approach 4: Augmentation. 12
	Historical Perspective. 13
	General 13
	Darby's Rangers 13
	Observations. 18
Section III.	The Case For Operational Employment 20
	General 20
	Heilbrunn Model 21
	Fort Eben Emael 24
	Crete 25
	Observations. 28
Section IV.	Implications. 31
	Organizational Implications 31
	Artillery and Mortars 31
	Air Defense 32
	Antitank Weapon Systems 33
	Transportation. 33
	Intelligence. 34
	Communications. 34
	Force Design Process. 34
	Doctrinal Implications. 36
	General 36
	Interaction with Heavy Forces 36
	Type of Employment. 37
	Desired Level of Employment 37
	Conditions for Employment 37
	Implications for Support. 38
Section V.	Conclusions 39

SECTION I: INTRODUCTION

Light infantry-what is it? Why do we have it? In his 1984 White Paper, the Chief of Staff of the Army indicated that while the light division is primarily a low intensity force, it must be capable of deployment to and operations in a mid- to high-intensity environment. What do we do with light infantry in such an environment? The answers to such questions have been alarmingly varied. A mid- to high-intensity employment concept is clearly required. However, before one can address the question of proper employment of a light infantry division in any environment, one must first understand the composition and capabilities of light infantry and how these compare with other forms of infantry.

The July-August 1985 issue of Infantry contains an article written by Colonel Huba Wass de Czege entitled "Three Kinds of Infantry."⁽¹⁾ This work provides a good logical framework from which an analysis of light infantry can proceed. The three kinds of infantry discussed are armored infantry, regular infantry, and light infantry.

There is a fourth category of infantry not discussed by Colonel Wass de Czege, which will not be addressed in this paper. Special Operations Forces (SOF) are separate and distinct in design, roles and missions, and therefore are a distinct category of infantry. Their uniqueness is such that they are not directly involved in the heavy-light controversy and so are not discussed.

The armored infantry, mounted in the M2 Bradley Fighting Vehicle, orients on the "advance and protection of the main battle

tank."(2) It has the capability to fight either mounted or dismounted, but does so with a focus on enhancing the effectiveness of the tank. It must have mobility equal to the tank and firepower capable of defeating the non-tank threats to tanks such as the BMP, attack helicopter and dismounted enemy infantry. The important point is that its primary function is to support the tank. This is a role which has evolved as a result of the fielding of a viable fighting vehicle. It is a mid- to high-intensity force.

Regular infantry is distinct from the armored infantry in that it is supported by tanks at the tactical level. Regular infantry accomplishes traditional infantry tasks: it defends terrain (to include towns and villages), it reduces fortified defenses, and it performs follow and support operations with tanks. In short, it holds ground and seizes objectives regardless of the level of conflict. To hold ground against modern mechanized and armored threats, it is clear that heavy weapons and equipment are required. The regular infantry is, therefore, armed with heavy antitank and automatic weapons possessing the range and lethality to kill enemy systems such as tanks, fighting vehicles, and attack helicopters. To survive against these attacks, additional heavy systems to entrench, dispense mines, and assist in building fortifications are added to the Tables of Organization and Equipment. "To increase its tactical and operational mobility and to carry the array of heavy equipment it needs to do its job, regular infantry rides. But it fights dismounted-always."(3)

The vital point here is that both armored and regular infantry are designed to be capable of engaging and defeating a mid- to high-intensity enemy. Armored infantry does so with a high cost, lethal, mobile weapon system, the M2 Bradley, which is used to enhance main battle tank effectiveness. As a result, the focus of armored commanders and armored infantry commanders are very similar.

It would be cost prohibitive and both tactically and operationally undesirable to outfit the entire force with the M1 tank and the M2 fighting vehicle. Therefore, a regular infantry force, equipped with less expensive weapon systems which can also defeat the mid- to high- intensity threat, is required. Its force design must include systems which protect it from tanks (i.e. TOW, Dragon, mines, and entrenching systems). This increase in equipment has given the regular infantry the capability to replace armored infantry in some roles such as the positional defense against tanks. The price paid for this decision, however, has been the burdening of regular infantry with an organization, equipment and missions which have drawn its focus away from traditional infantry operations such as infiltration, exfiltration, raid and ambush. It can no longer perform as true light infantry.

The force designers defined the light infantry division as a 10,000 man infantry force capable of being transported in 500 C141 sorties. This provides little more than a list of characteristics, certainly not a definition. It doesn't shed much light on the roles and missions of the light infantry force.

In his 1984 White Paper on light infantry divisions, the Chief of Staff provided guidance which indicates that the light infantry division is to focus on low intensity conflict, but is to also be capable of deployment to and combat in a mid- to high intensity environment.(4) The Operational Concept for the Infantry Division (Light) published in March 1984 agrees with the Chief of Staff's White Paper to the extent that it calls upon a light division to focus on capabilities to defeat light enemy forces in a low-intensity conflict, while retaining utility for employment in other scenarios. It warns that employment in a mid- to high-intensity conflict carries with it a requirement for for "augmentation in forces, weapons, and equipment to perform a full range of missions in mixed or open terrain against heavy forces."

The reader is still left wondering what this force is to do in a mid- to high-intensity environment, not to mention what characteristic should guide its use. Colonel Wass de Czege provided some insight concerning this in his description of light infantry.

"Light infantry is specialized for rapid air transportability, clandestine insertion, very rugged terrain, night operations, infiltration, raids, and ambushes; it gives off only small tactical signature."(6)

Edward N. Luttwak made some suggestions in his study Strategic Utility of US Light Divisions, A Systematic Evaluation.

"The salient difference between the 'light' and regular infantry lies in their respective modes of warfare rather than in their

equipment."

"...the regular infantry fights predominantly in a linear-front mode as part of a wider array of forces, both serving and being served by the extra-divisional artillery, armor and other elements with which it must cooperate at the tactical level;"

"...the light infantry on the other hand, normally fights in a non-linear and tactically independent manner, even if its actions are coordinated with those of other elements at the operational level;"(7)

Together these passages provide a conceptual description of what light infantry is and how it differs from regular infantry.

Figure 1 provides the model for infantry forces which will be used as a point of departure for this analysis. The force package contains four distinct types of infantry (if one includes SOF) which are tailored to be responsive to the entire spectrum of conflict. The problem is to determine how to adapt the light infantry division, a force "optimized for low intensity conflict", to the mid-to high-intensity environment. The manner of employment must take into account the strengths and weaknesses of this unit. The premise of this paper is that a light infantry division in a mid- to high- intensity environment can be a force multiplier if its operational employment is innovative, mobile and offensive in its orientation.

LEVEL OF CONFLICT

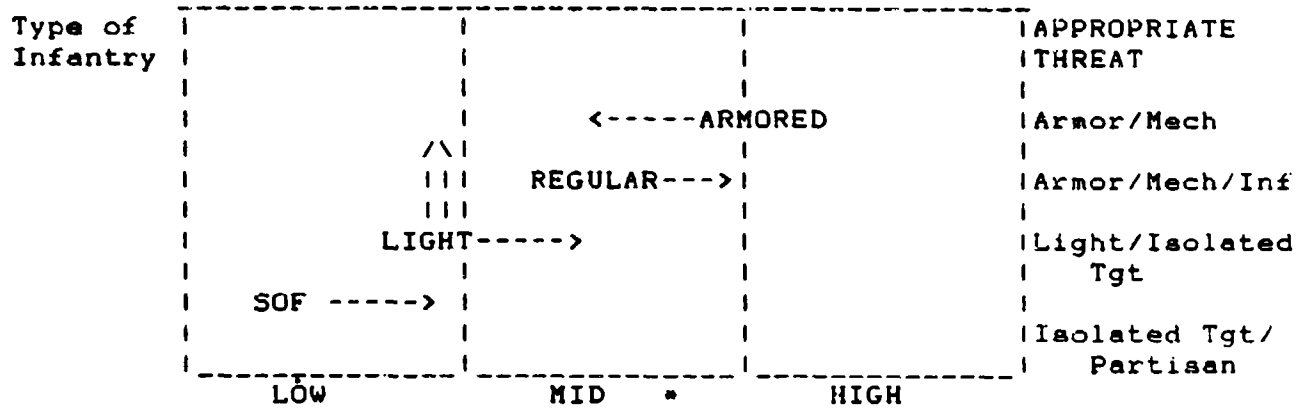


Figure 1. Force Structure Optimization

Note: Each type of force has been optimized for a given level of combat. When a conflict arises with intensity at a level designated by the asterisk, for example, an attempt is made to align the forces at this point by adapting the skills of the types of infantry horizontally to suit the conflict at hand. This is acceptable. What is not acceptable is an attempt to also align the skills vertically causing units to engage the wrong threat. Positional defense by light forces, even with augmentation, against mechanized or armored forces is an attempt to do this.

The methodology for defending this premise is to begin with an examination of certain popular approaches to the use of light infantry in a mid- to high-intensity environment. Shortcomings associated with these employment options are addressed. This is followed by a comparison with analogous uses of light infantry in WWII. The operations of Darby's Rangers provide several examples of the employment of a light infantry force. The employment of Darby's Rangers during WWII evolved over time. The roles assigned at one time or the other were in many respects similar to the popular approaches suggested for today's light forces in a mid- to high-intensity environment.

Next, an alternative employment concept is presented. This suggests that light infantry would be better utilized in an operational role. Even a mid-to high-intensity battlefield has areas where the intensity of combat is relatively low. A conceptual model that differentiates the potential employment areas according to intensity is used to demonstrate how armored infantry, regular infantry, light infantry and special forces might be used in accordance with their capabilities and limitations. While popular approaches suggest that light infantry should be employed in the intense portion of the battlefield near the FLOT, the hypothesis of this paper is that this is precisely the wrong approach. Rather, if a force is optimized for a given type or intensity of conflict, it should be used in that manner. German operations at Fort Eben Emael and Crete are presented as examples of major operations conducted by light forces during WWII where success was due in part to the

employment of the light force in its proper role in the proper part of the battlefield. The factors which characterized these operations and contributed to their success are examined to see if they can be adapted to operations which might be conducted by modern light forces.

The analysis continues with an examination of the doctrinal and organizational implications arising from the proposed operational use of light infantry. Finally, conclusions derived from the implications for the employment of the light infantry are presented.

One caution should be made to the reader at this point. Although there may be a tendency to envision a West European scenario automatically when thinking of a mid-to high-intensity scenario, an assumption made here is that this analysis is not constrained to the European Theater of Operations. The likelihood of such a conflict is high in many regions of the world and light infantry might be of utility in any of these.

SECTION II: THE CASE AGAINST TACTICAL DEFENSIVE EMPLOYMENT

Popular Approaches

General. The question of the employment of light infantry in a mid- to high-intensity war has evoked a series of articles from the field. These offer four approaches to the employment of light infantry.

Approach 1: Replace Armor. The first school of thought is

to split the light infantry division up into separate brigades and attach them to mechanized or armored divisions. The assertion is that the division commander could use a light infantry brigade to "assume a defensive sector to free an armor brigade for offensive action." (12) The presumption is that a light brigade can occupy adequately the terrain originally assigned to an armored brigade. The same author who suggests the use of a light infantry brigade as a replacement for an armored brigade states "light infantry fights best in forests, mountains, ravines and built-up areas." (13) The very thought that an armored brigade would be placed in such a sector in the first place is difficult to comprehend. Terrain originally assigned to mechanized or armored units was ordinarily assigned because it constituted a threat from enemy armored formations. In this case, a force with a credible antitank capability, i.e. a regular infantry unit, is the only viable replacement to free up an armored force. The regular infantry has purposely evolved to perform this mission. That is why it is so heavily armed with antitank, countermobility and entrenching equipment. The light infantry is neither equipped nor trained for an antiarmor mission. It cannot perform under any circumstances as a replacement for an armored or mechanized formation.

Approach 2: Static Defense. A second school of thought proposes the attachment of a light infantry brigade to a mechanized or armored division for employment either in the static defense of a terrain feature, such as a wooded hill mass, or broken into separate battalions to perform isolated tasks such

as the defense of a village, reaction to an airmobile insertion or other "light missions." (14) The problems associated with the defense of a specific piece of terrain are numerous. In addition to the issues already highlighted, a light force in a static defense can be isolated and bypassed. In a European scenario the Soviets could simply isolate the brigade through the use of artillery, smoke, chemicals or fire and movement from maneuver units. A very small Soviet force could negate the effectiveness of a light infantry brigade which is inferior in firepower, mobility and protection. The entire brigade possesses only twelve TOWs and fifty-four Dragons. As a result, the preponderance of the brigade's firepower is effective only under 1000 meters. The limited number of systems would not be capable of firing quickly enough to stop a mechanized or armored attack of any significant size given range and reload time constraints. Unless additional TOWs, tanks or other systems are given to the light brigade, it cannot accomplish its mission. If these systems are given to the light force, it is done at the expense of another unit such as regular infantry. These other units are not designed with sufficient redundancy to give away their systems without severe degradation to their own capability. This is therefore an unacceptable option.

If bypassed, the light brigade has a major mobility differential problem with which to cope. In fact, the authors of the article suggesting this employment of light forces are themselves preoccupied with how to move the light force on the battlefield. Their solutions are footmarch, air assault and

ferrying by Bradley Fighting Vehicle. Footmarching is too slow and once the brigade is bypassed this amounts to nothing more than escape and evasion. Air assault is possible but is high risk in the vicinity of the front lines because of the air defense threat. As such its value as an option is questionable. Ferrying with the Bradley is also possible but it removes the Bradley from its more vital role as a fighting vehicle, preparing or fighting the next engagement, and instead relegates it to a shuttle bus with the associated unnecessary exposure to fire. It also leaves unanswered what one does with the Bradley crew while moving light infantry fillers. This again detracts from overall force effectiveness by diminishing the mobility of the Bradley, which was purchased by assigning the light infantry unit to the division in the first place. Further, the effectiveness of the Bradley system is reduced when its trained crew is separated from the weapon system.

Approach 3: Use as Fillers. In a variation on this second approach, the same authors provide insight into the primary consideration for the employment of light infantry from their point of view.

"beyond the internal requirements for planning, coordination, and imagination is a set of larger issues. The first is that a Division 86 heavy division needs more foot soldiers. In a mechanized division that has five infantry battalions, only slightly more than 1,000 soldiers will hit the ground when the ramps of all their Bradleys open. A strategically deployable light force can provide these soldiers."(16)

The perception of the authors is that the heavy division is poorly designed and that the light division can be used essentially as fillers to rectify the perceived shortfall. Even if the heavy division was a mistake, the solution is not the misuse of another tactical unit to rectify it.

Approach 4: Augmentation. A third school of thought states that the light division should be flown into theater and then augmented with artillery, air defense, air support, engineers and other assets in order to beef it up to do the job.(17) This point of view suffers from two shortcomings. The first is that the augmentation is made at the expense of some other element of the force. The question is whether or not the cost of augmentation exceeds its benefits. The second problem is that augmentation is an attempt to convert light infantry into something it is not--a regular infantry force. As was pointed out earlier, light infantry is not regular infantry with less equipment. The focus and training are different. The addition of equipment does not make this force into regular infantry without a significant change of focus and associated time requirements for training.

Regular infantry trains extensively on conventional defensive techniques to survive and defeat a mechanized-armored attack. While the light infantry trains on the defense, its strengths lie in gaining a relative tactical mobility advantage in severe terrain, in the conduct of night operations, in the use of stealth and in the maintenance of a low signature profile.

Almost always, tactical offensive techniques are employed by this force. The light infantry lacks the equipment, training and survivability to replace the regular infantry. The augmentation of the light infantry with additional equipment is nothing more than an attempt to change light infantry into regular infantry and is not acceptable.

Historical Perspective

General. The assignment of a regular infantry mission to a light infantry unit requires as a minimum the acceptance of a high degree of risk and in fact might be an open invitation to catastrophe. The use of light forces can range from a "light" conventional role, through an offensive conventional role, to a defensive conventional role. One light force, Darby's Rangers, performed each of these missions during WWII and, as a result, provides excellent examples of the possible outcomes for a light force assigned these roles.

Darby's Rangers. The roots of Darby's Rangers go back to the spring of 1942 when Army Chief of Staff George C. Marshall decided that American troops should be trained to take part in British commando raids against German-occupied Europe.(18) These troops were to participate as individuals and then return to their units in order to provide some combat experience to the regular infantry before landing in Europe. In May 1942 a decision was made that the troops would be formed into an American commando unit to be trained by the British and subsequently returned as individuals to their units to assist in training. The focus of the training was on such light infantry

skills as self defense, marksmanship, scouting, mountaineering, small boat handling and demolition.(19) The battalion-sized unit was to be led by Captain William O. Darby, an artillery officer serving as aide-de-camp to the general officer responsible for organizing the unit.

The initial organization was determined and commando training for the Rangers was completed by 24 September 1942 when the battalion began to prepare for its part in Operation Torch. At the start of the war, the battalion consisted of 26 officers and 452 enlisted men formed into an HHC and six line companies. Each company had three officers and sixty-three soldiers formed into a company headquarters containing two 60mm mortars and two platoons. The platoons consisted of one officer and twenty-five soldiers formed into a platoon headquarters and two sections. The sections contained a section leader, assistant section leader, two scouts, one BAR, one assistant BAR and five riflemen. Heavier weapons such as the .30 caliber machinegun and the .55 caliber antitank weapons (later bazookas) were pooled at battalion.(20) This organization enhanced tactical mobility, stealth and other light infantry tasks, although firepower was limited. The firepower continued to increase though throughout the war with a corresponding change in the Rangers.

The 1st Ranger Battalion landed in French North Africa on 8 November 1942 as a part of Operation Torch. A surprise night landing was made north of Arzew, Algeria in which the main coastal defenses were neutralized and selected docks captured.

This operation was a complete success largely because of rigorous training and thorough planning and resulted in the loss of only one Ranger. (21)

The 1st Ranger Battalion began to transition from true light infantry designed to perform special operations into a force organized more like regular infantry. Two tendencies can be identified as responsible for this trend. The first tendency was the incorporation of heavier weapon systems as a result of an occasional need for more firepower. The second trend was the increased use of the Rangers in conventional operations when required or expedient. Ironically, the two trends reacted on each other. When the Rangers were used conventionally they required more firepower, which they got. As the Rangers got heavier weapons, they were called upon to perform more conventional missions. Darby, as an artillery officer, naturally sought solutions in terms of more firepower versus lighter missions. His appreciation of firepower was so strong in fact that his executive officer, Major Herman Dammer, later stated that Darby had a "fetish for firepower". (22)

The initiation and interplay of the two trends, firepower and conventional missions, began with the battalion's first major combat mission. The increase in the Ranger's firepower actually occurred prior to Operation Torch when Darby temporarily replaced the battalion 60mm mortars with heavier 81mm mortars. In this manner the firepower of the Rangers increased; the use of the Rangers in conventional operations was soon to follow. Within

fourteen and a half hours of landing, the Rangers were called upon to perform a conventional mission, the seizure of two towns, La Macta and St Cloud. The spiral of more firepower-more conventional missions had begun.(23)

The transition of the battalion to a heavier force with more conventional missions began to have an adverse effect from the start. On 20 March 1943, the 1st Ranger battalion attached 4.2in mortars to assist in an infiltration attack to seize a mountain pass near El Guettar. The weight of the 4.2in mortars caused them to lag far behind the main body. The Rangers attacked and seized the pass with organic weapons while the 4.2in mortars managed to arrive in the closing moments of the fight to fire a few rounds. The heavier systems had not appreciably contributed to the accomplishment of the mission. Rangers, operating as commandos, accounted for over two hundred Italian prisoners by their own claim in this operation. In fact the total for the Rangers and infantry (attacking from the front with the Rangers attacking from behind) was over 1000.(24)

In the spring of 1943, the number of authorized Ranger battalions was increased from one to three. These three Ranger battalions would henceforth be referred to collectively as the "Ranger Force." In May of 1943, Darby received approval for another modification to Ranger Force: the permanent attachment of a 4.2in mortar battalion. The firepower for Ranger Force had as a result grown from 60mm mortars to 81mm mortars in each company plus a direct support battalion of 4.2in mortars.

As the war moved into Sicily, the Rangers were used more and more as regular infantry. In one instance, shortly after the Rangers had landed at Gela, the Germans and Italians counterattacked with a resulting brief penetration of Gela by Italian tanks. The Rangers were thus given the mission of regular infantry: defense of a small town. "Darby played an active part in the defense. He personally destroyed one Italian tank with a borrowed antitank gun and was seen riding on the top of a second tank trying to open its hatch so he could grenade the crew." (25) Darby drew a lesson from the experience and decided that the Rangers needed to have an antitank capability. As a result, he created a Ranger cannon company armed with four 75mm guns mounted on half tracks. (26) Darby had thus accepted the gradual transition of the Ranger mission from commando toward conventional. To protect his troops, he armed them in a heavier manner. Ironically, the heavier weapons which were added to the Ranger force structure to protect them against a heavy threat actually led to the use of the Rangers against even heavier threats. The increased firepower of the Rangers made heavier mission assignment acceptable.

The spiral of increased firepower and more conventional missions continued until 30 January 1944 when the Rangers led a conventional attack against German forces at Cisterna. The Ranger attack, lacking surprise, was conducted across open terrain not suited to light infantry operations. To make matters worse, the attack was intercepted by the Hermann Goering Panzer Division. This forced the Rangers into a tactical defensive

posture against a mechanized-armored threat in open terrain. The result was that of the 767 men participating in the attack, only 6 made their way back to friendly lines without being killed or captured.(27) A light infantry force which had grown too heavy to accomplish its originally intended purpose was also too light to replace conventional infantry in the accomplishment of conventional missions against tanks. The result was the total destruction of this elite force in the space of a few hours.

Observations. The operations performed by Darby's Rangers provide insight into the conditions necessary for the successful employment of light forces in a mid- to high-intensity environment. The light force is lacking in the absolute elements of firepower, mobility and protection. It is only effective when it can isolate a portion of a battlefield and achieve relative advantages in these areas. Instead of a proposal to put light infantry in rugged terrain because that's where light infantry fights, the employment of the light force should be where it can gain a relative firepower, mobility or protection advantage to the extent that it can be reasonably expected to beat the enemy in an engagement there. For example, mountainous terrain might allow the infantry to engage tanks from areas too high for a tank gun to elevate and a relative firepower and protection advantage might thus be gained. If the enemy is largely restricted to roads, a relative mobility advantage might also be acquired. The sum of these relative advantages might allow the light force to emerge as the victor.

Additional conditions must be met if the effectiveness of the light force is to be enhanced. Surprise can contribute to gaining relative advantages in firepower, mobility and protection by catching an enemy off guard. It is a combat multiplier which should not be neglected if the full potential of the light force is to be obtained. The Rangers lacked surprise at Cisterna and as a result, their destruction was facilitated.

The light force must be employed against an appropriate threat. The Rangers were annihilated when they encountered the Panzer Division at Cisterna. On the other hand, they did very well against a lighter enemy in North Africa. One factor to be considered, however, is that the Rangers were successful against heavier threats when the cohesion of the enemy force was weak or could be directly targeted. The knowledge that an enemy force is operating in his rear area can be paralyzing to a commander and thus can have a direct impact on the cohesion of the force and subsequently on the will and resolve of the enemy commander to continue the fight.

When light infantry is employed in a portion of the battlefield where it cannot be isolated from a heavy threat, friendly heavy forces must be available to linkup and assist it in a timely manner. When a light infantry force is employed in an area where the enemy can react with a heavy force, the light force is placed at great risk. If a link-up cannot be performed quickly to counter an enemy reaction to the light force with heavy forces, the light force will be destroyed. This was the case with the Rangers at Cisterna, and they were decimated. The

decision to employ the light force in this manner must be accompanied by a feasible link-up plan by heavy forces should the need arise.

SECTION III. THE CASE FOR OPERATIONAL EMPLOYMENT

General. Operational art is "the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization and conduct of campaigns and major operations." (28) A major operation comprises the "coordinated actions of large forces in a single phase of a campaign or in a critical battle." FM 100-5 goes on to say that "major operations are the coordinated elements or phases of a campaign. The success or failure of a major operation will have a decisive impact on the conduct of a particular phase of a campaign." (29) The first task is to demonstrate that a light force can reasonably perform a major operation. The second step is to examine historical instances of light forces conducting major operations. Finally, the implications of the employment of light forces in major operations are presented.

A light division which is not committed initially to a positional forward defense in a mid-to high-intensity conflict might well find itself as a reserve force awaiting employment. FM 100-5 discusses options for a force in this posture.

"The choices for employing corps or divisions

held in reserve will be between using it to annihilate the enemy in the battle area or pushing it through the defended area to secure deep objectives. Seizing objectives in operational depth is preferable since that will set the tempo for the campaign's next phase or may even gain the objectives of the campaign."(30)

In addition to options for employment, possible payoffs are discussed.

"Successful deep operations limit the enemy's freedom of action, alter the tempo of operations in favor of the friendly force, and isolate the close fight on advantageous terms."(31)

Thus far FM 100-3 has indicated that a desirable option would be to consider sending a reserve force deep in order to gain compound advantage for its employment. The issue then is whether or not this is a feasible option for light infantry. Can the light infantry division, "optimized for low intensity conflict", contribute in a meaningful way in such employment and if so can it survive? These are the issues.

Heilbrunn Model. To answer the first question a division of the battlefield into distinct parts is necessary. Figure 2 provides a look at the battlefield from this perspective. Otto Heilbrunn, in his book Warfare in the Enemy's Rear, discussed the employment of light forces in the rear of enemy lines from the perspective of several armies during WWII. In order to do this, Heilbrunn created a model of the battlefield with an immediate, near and far rear.

The immediate rear, the actual depth of which will vary with terrain, enemy and other factors, includes the rear area of the front line tactical units. Combat units from the front fight in this region. In addition to the continuous movement of the FLOT in the immediate rear areas, local counterattacks and other full scale combat operations are conducted. This is a dangerous place for light infantry in that the threat to it there is not appropriate to its capabilities. It cannot stand and survive here. The intensity of combat ranges from medium to high; this is not the environment for which the light infantry has been "optimized".

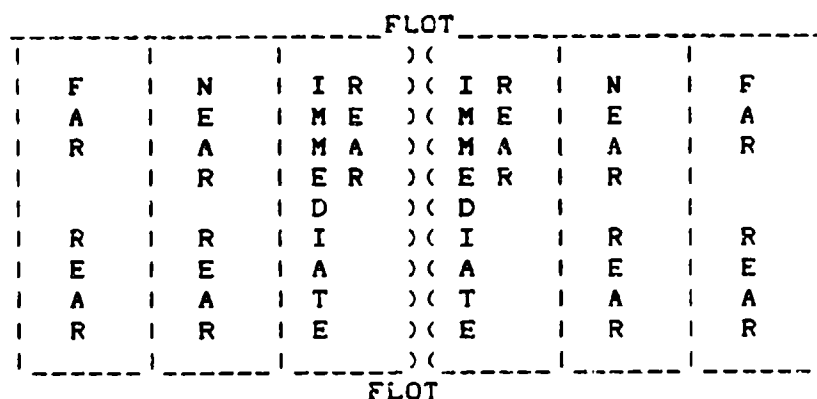


Figure 2. Mid-to-high intensity battlefield.(32)

The near rear lies deeper than the immediate rear and is characterized by combat support and combat service support assets moving supplies to the front. The units employed in this portion of the rear have the option of fighting or harassing enemy forces found there. The depth of this portion of the rear might vary considerably, dependent on terrain and enemy disposition. It

might well be much deeper in North Africa or Iran than it would be in Europe even against a similar threat. The important point, however, is that the intensity of combat normally found here is low to medium and as a result is much more conducive to light infantry employment. The expected threat is certainly more appropriate. Successful employment in this portion of the rear is contingent on several factors. First of all, the force must be able to move through, over or around the forces at the FLOT and retain cohesion and mission capability once in the near rear. Secondly, the light infantry must be able to link up with conventional armored forces in a timely manner, and seek refuge where enemy armored or mechanized forces cannot pursue it. Heilbrunn describes this as "operating on a closed battlefield where no enemy reinforcement can occur." (33)

The far rear is primarily an area where harassing of the enemy is conducted. The intensity of combat is usually low yet may rise to mid-intensity on occasion. This area is normally the part of the battlefield in which special operations forces are used. The level of intensity and the ability to achieve surprise in this portion of the battlefield also make it a candidate for light infantry employment in an operational sense. During WWII, Rangers, Commandos and other special units operated in the near and far rear with success. In addition to the US and Britain, Japan, Germany and Russia saw the advantages of operating in these regions of the enemy rear and employed forces operationally to take advantage of enemy weakness there. These operations were often used in coordination or in conjunction with partisan

activities.(34)

In summary, the near rear is the area where Rangers, Commendos, airborne and other light forces perform tactical and operational missions. In the far rear, these same forces would normally be employed to accomplish operational and strategic missions. The use of light forces in WWII followed this pattern and can be categorized into two major areas. These are tactical assignments, and operational assignments.(35) A particular type of operational assignment, the coup de main, was prevalent and will be examined.

Fort Eben Emael. During the spring of 1940, the German army, preparing plans for its attack west through Belgium, found itself faced with a major problem. In order to cross the Albert Canal, General von Kluge's 4th Army needed to capture intact the bridges at Vroenhoven and Veldwezelt. These bridges were guarded by forces and weapons positioned at Fort Eben Emael. The Germans sought a solution in the employment of light forces. On 10 May 1940 they airdropped 80 troops in gliders directly on the superstructure of the fort, thus eliminating the potential for flanking fire on forces crossing the bridges. Additionally, an estimated 500 paratroopers were dropped between the bridges and the garrison containing forces designated by the Belgian army to counterattack to destroy the bridges as required. This operation employed a very small force and allowed the German army to pass across the fortified Belgian border with a minimum of casualties. This successful coup de main was a tactical event sequenced by the high command to ensure the operational success

of the overall campaign. (36)

Crete. German operations in Crete in 1941 exemplify light force employment at a higher level of operational art. In early 1941, the German Army began to plan operations which were designed to gain control of the Mediterranean Sea. As an initial step in this process, it was determined that the island of Crete had to be seized. "The initial reasons for seizing Crete were to cut the British off from the eastern end of the Mediterranean and the Balkans and to support German operations in North Africa. In conjunction with future operations to seize Malta, Cyprus, and the Suez Canal, the Germans' strategy was designed to dominate the Mediterranean and cut off Britain from her Middle East empire, isolate Russia from the south, and support German operations in Africa." (37) The conquest of Crete was a major operation within the strategic whole.

The actual plan for the seizure of Crete, code-named "Merkur", was presented by Major General Kurt Student, commander of the XI Air Corps, to Hitler on 20 April 1941. A directive granting approval of the plan was signed by Hitler on 25 April 1941 which scheduled the operation for 20 May. Hitler was concerned that the Crete operation not conflict with Rommel in North Africa, and that it not compete for resources with Operation Barbarossa which he was secretly planning. He was convinced that the seizure of Crete could be accomplished with minimal force in approximately ten days. To this end, the forces assigned the mission to seize Crete consisted of the Seventh

Airborne Division and the Fifth Mountain Division which had been involved in the conquest of Greece. The operation was a joint operation involving ground, air and naval forces and was commanded by General Loehr, commander of the Fourth German Air Force. This provided the German force a very flexible command structure for the operation.(38)

Allied forces on Crete consisted of some twenty-eight thousand soldiers under the command of General Bernard C. Freyberg. Although the number of soldiers defending the island seems impressive, this is misleading. General Freyberg had assumed command of the forces on 30 April 1941 and inherited a situation in which he had no control of the air or naval forces on the island. Further, the preponderance of the forces at his disposal were multi-national combat service support personnel which had just been evacuated from Greece. In the evacuation process, most of the equipment necessary to equip the British force had been left behind. Only the original 5000 man garrison was fully equipped.

The island of Crete, shown at figure 3, is approximately 130 miles long and between eight and twenty-five miles wide. A mountain range runs down the entire length of the island which dictates that the main road, airfield and ports lie generally along the northern coastline. Major ports were located at Canea and Heraklion. Airfields were located at Maleme, Canea, Retimo and Heraklion. Access to the southern coast was restricted to roads along the coast and the few very rugged roads and trails

CRETE

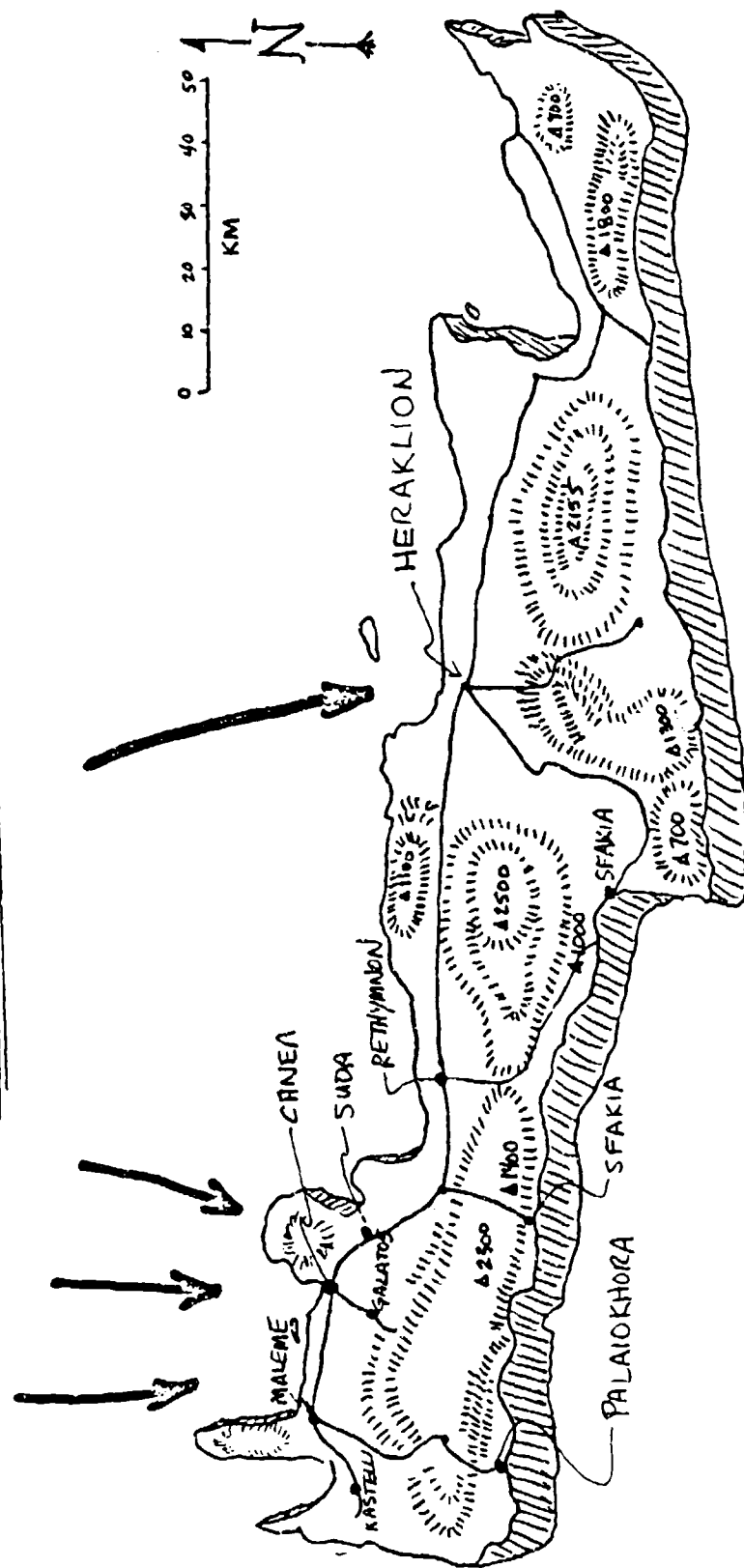


Figure 3. Crete (20 May 1941-1 Jun 1941).

which traversed the mountains.

The defensive planners for Crete envisioned two possible scenarios which the Germans might employ. The first was an amphibious assault along the northern coastline; the second was an airborne assault against the airfields. The defenders did not have sufficient equipment to defend adequately against both possibilities; however, the dilemma was solved when General Wavell directed General Freyberg to defend the airfields on Crete.(39)

The German plan for the seizure of the island called for the seizure of the airfields by the airborne division, followed by the airlanding of the mountain division the next day. Heavy equipment to include the heavy artillery would reach the island by ship. The plan was to linkup the airborne and mountain divisions and subsequently conduct combined operations to drive the defenders from the island.(40)

The actual conduct of operations on Crete took eleven days. The Germans attained control of the air war early and retained it throughout the operation. However, despite heavy bombing the Germans did not take out the British artillery nor did the reconnaissance effort accurately determine the size of the defending force. The artillery fire from the British guns placed the operation in jeopardy at several points during the fight for Crete. Despite prior reconnaissance, the Germans believed that the defenders numbered approximately five thousand troops.(41)

The initial assault took place at 0800 hours on 20 May 1941

with landings near the airfields and beaches at Canea. Simultaneous insertions by glider infantry were occurring near Maleme. The second wave, which consisted of airborne insertions at Retimo and Heraklion, occurred at 1500 hours in the face of devastating fire which caused these attacks to fail. The operation at Maleme succeeded on 21 May 1941 when an airborne battalion attacked and seized control of the Maleme airfield thereby allowing the Fifth Mountain Division to airland. Maleme was under German control by the end of the 22d of May. This afforded the Germans a line of reinforcement and resupply.(42)

The British defense scheme was modified to focus on the defense of the road from Maleme to Canea. The British left flank was tied into the mountains which were perceived to be impassable by the defenders. The German 85th Mountain Regiment enveloped the defenders through the "impassable terrain" and managed to link up with forces in Canea on the 27th of May after moving some fifty miles through the mountains. Despite attempted counterattacks to dislodge the Germans, the British were forced to evacuate Crete on 31 May. The battle for Crete thus ended with the evacuation of fourteen thousand soldiers to Egypt.(43)

Observations. The success of light forces at both Fort Eben Emael and on the island of Crete was achieved for a variety of reasons. The selection of an objective with an appropriate threat, the ability to achieve surprise, the support of the force with the appropriate fire support, the achievement of a relative mobility advantage over the enemy, and the offensive use of the light force characterized the employment of the units in these

two operations.

First of all, an appropriate target with an appropriate threat was selected. In addition, as they were lightly armed, the defending forces on Crete also lacked cohesion. This served as a combat multiplier for the employment of the light force.

A second reason for the success of these two operations was the ability to gain initial surprise. The seizure of the bridges, the attack on the fort and the placement of forces between the garrison and the bridges were all accomplished to the surprise of the enemy force at Fort Eben Emael. The result was that no coordinated effort was made to stop the crossing of the Albert Canal. In the operation on Crete, although there is some indication that the British defenders knew of the date of the planned German invasion, some surprise was obtained in the initial airborne landings.(44) Surprise was certainly obtained when the German mountain regiment enveloped the defenders of the Canea-Maleme road. Only a light force could have accomplished this.

Appropriate fire support does not always refer to heavy artillery. At times heavy artillery may be critical to the operation; at others it might be of little value. In the case of the operations on Crete, the key to success in terms of fire support was close air support. The rugged, restricted nature of the terrain in addition to the difficulty in getting the heavy artillery onto the island made the airplane the weapon of choice. This was especially true for the 85th Mountain Regiment as it

made its 50 mile attack through the mountains.

The forces in both examples were able to gain a relative mobility advantage over the defender during the operation. At Fort Eben Emael, this came initially through the airborne and air-landing of the forces which placed them on their objectives in a very sudden manner. The tactical placement of these forces bottled the Belgian forces up in their garrisons and thus retained this initial advantage. In Crete, the airborne and airland operations placed a large number of forces in theater in a short period of time. This was accomplished without exposure to enemy observation and fire until the actual landing. More important to this argument, the movement of the 85th Mountain Division through the mountains of Crete is a sterling example of light forces gaining a relative mobility advantage over the enemy and capitalizing on it.

The final element which added to the success of the light forces in these operations was that their employment was offensive in nature. A defender, who does not know exactly where the attacker is going to hit, loses the initiative and must disperse his resources in the defense. This allows the attacker to employ a sort of economy of force by being able to concentrate combat power at a precise time and place against the dispersed enemy defender. This occurred at Fort Eben Emael where the Belgians had to defend the fort, the bridges and the intervening terrain. It also occurred in Crete where the defender didn't know if the attack would come by sea or by air. Even when the

order came to defend the airfields, the defender still had to disperse to cover all the possible landing sites. This offensive use of light forces is again a combat multiplier in that it does not have to bear the brunt of a focused enemy attack, rather it can focus on only a portion of the enemy at a time.

SECTION 4. IMPLICATIONS

Organizational Implications

General. The light division as currently structured is not optimized for employment in either a tactical or operational manner on a low intensity battlefield or in low-intensity portions of mid- to high-intensity battlefields. Specific shortcomings are as follows.

Artillery and Mortars. One of the initial decisions made for the light infantry division was the reduction of the number of mortars in the division. This was done without regard to the roles and missions which the division might perform or to the ability of the division to take its artillery forward with it. In the employment of the division in the near and far rear, the feasibility of inserting artillery with the force will be on the margin. Further, resupply of the artillery with ammunition will be difficult to impossible to accomplish. In operations at Fort Ebel Emael and in Crete, heavy artillery was not able to accompany the force initially. Light infantry operations are characterized by small unit initiative and thus there is a need to make units at the lower levels as self-contained as possible

without overburdening them with weight. Removing the additional lightweight mortars and adding artillery which may not be able to deploy is not the solution. Another light infantry fire support issue is the incorporation of a division artillery headquarters in the structure. This headquarters serves no substantial purpose in the light infantry division. There is insufficient artillery in a properly designed division to necessitate its retention in the force structure. The retention of the division artillery headquarters appears to be to facilitate future artillery augmentation of the division, which is not a desired option. Additionally, Fort Eben Emael required basically a brigade-sized force. Crete required two divisions of light infantry. The structure must be flexible enough to permit this type of force packaging on short notice. Therefore, artillery battalions (105mm) organic to the division should be attached permanently to the brigades. This would provide the required flexibility and also enhance effectiveness through habitual association and training.

Air Defense. The rationale for the retention of an air defense headquarters in the division suffers from the same problems as the retention of the division artillery headquarters. The division certainly requires the air defense protection provided by the Stinger and preferably follow-on, lighter weight systems. The proposal for a PIVAD or other gun reflects an attempt to retain as much of the structure of the regular infantry division as is possible without regard to the fact that the mission has changed. Again, the heavier air defense systems

may not be capable of accompanying the main force and are therefore of limited utility. The division requires lightweight air defense, organic at the lowest possible level.

Antitank Weapon Systems. The division has too few heavy antitank weapon systems to be effective against any armored force of significant size. On the other hand, it has too many of the heavier systems to be capable of conducting true light infantry operations. A lightweight lethal system is needed for the self defense of the soldiers in the division in order to preclude annihilation if an encounter with an armored unit should occur and a link-up with a heavier force is delayed. Until a credible replacement for the Dragon is found, the TOW should be retained. Once this occurs, however, a system which can be man-packed into severe terrain must be fielded.

Transportation. Depending on the circumstances, the one resource which the light infantry division needs most critically is wheeled transportation. Although this resource need not be organic, it must be dedicated whenever a requirement exists to rapidly reposition the force. An example of this type of mission is when the division is in a reserve status and subject to call to respond to a rear area mission or when it actually has been assigned such a mission. The need to retain relative mobility is overriding when the division is facing a mobile threat in terrain conducive to mounted movement. The division does not however, require tanks. The attachment of tanks is an attempt to use this force as regular infantry, which is something for which it was

not designed.

Intelligence. The survival of the division is very much keyed to its intelligence capability. The force design process sought to trim this capability to the bare bones without realizing that when mobility and firepower have been reduced increased emphasis must be placed on finding out what the enemy is doing and is planning to do in order to compensate for these limitations. Early, accurate intelligence leads to timely decisions and subsequently to more execution time at the lower levels.

Communications. Increased emphasis must be placed on giving the light infantry division lightweight, long-range communications equipment. Although the tactical satellite goes a long way towards accomplishing this, the vulnerability of this system necessitates the use of more conventional means as well.

Force Design Process. If the process by which a unit is structured results in an organization with significant design faults, a check should be made to see if a systemic problem exists. The force design process from which the light infantry division was derived appears to have been thus flawed. The manner in which Darby's Rangers evolved into its final organization produced an equally unacceptable force structure. It is imperative that the flaws in the design of these units be identified in order to better structure our forces to accomplish their missions in the future.

In the development of the light infantry division, the restrictions to force structure were placed on the design process prior to the conduct of any analysis. Specifically, the limitations for the division to be a 10,000 man force capable of being totally transported in 500 sorties appears to have been the principal design criteria. The physical structuring of the division followed in a manner which was nothing more sophisticated than the scaling down of the regular infantry force to a point where it met the design restrictions. An analysis of the roles and missions is ongoing in the manner of "we've got it, what do we do with it now?" The consternation is most vivid in the heavy-light connection literature discussed in this paper. The final outcome of this process will be a compromise organization which will attempt to satisfy all interests yet will probably work only because of the efforts of the superb soldiers and officers currently assigned to the divisions. The best interests of the army are not served by this process.

The force design process for Darby's Rangers was initiated in a proper manner with a statement of the roles and missions the force was to accomplish. The design of the force followed as did the specific training that the Rangers needed to be capable of performing the stated missions. The force design process got off track, however in the evolution of the organization through the sequential process of obtaining heavier weapon systems and then performing more conventional missions as previously discussed. The evolution continued until the force became too heavy to perform the light missions for which it was intended and too

light to perform the conventional missions which it was increasingly called upon to accomplish. The result was its eventual destruction.

The desired force design model is one based on a concept which has stated roles and missions. The design of the division should be developed in an unconstrained manner to structure a force which can accomplish the missions. Restrictions and constraints are then applied to the structure to determine if the organization is a feasible one. If it is not, the roles and missions need to be reexamined to see if too much was included. This process is repeated until a force is designed which is capable of accomplishing what is desired and yet is affordable and feasible.

Doctrinal Implications

General. Doctrinal implications for the employment of the light infantry division deal with its interaction with heavy forces, type, desired level, and possible location of employment.

Interaction with Heavy Forces. The light infantry division has its hands full in maintaining its proficiency in light infantry skills. It does not support the tank, nor is it habitually supported by the tank. These missions are normally performed by armored infantry and regular infantry, respectively. It should not be expected to augment itself with significant numbers of weapon systems and function as regular infantry as a matter of course. The training it undergoes has a different

focus. The light force is best utilized in the manner in which it was trained. A decision to augment this force and have it operate as regular infantry will require training time for it to do so.

Type of Employment. The light infantry division should never be given a positional defensive mission in anything other than the most severe terrain which precludes the passage of armor. To do so is to invite its destruction or failure to stop the enemy force. This force should be employed in an offensive manner, against an appropriate threat, in a manner in which it can achieve surprise and where it can seek refuge or be reinforced if a significantly heavier force is encountered.

Desired Level of Employment. While the nature of the mission will dictate the exact size of the required force, it is clear that credible brigade-sized missions do exist and may in fact be more common than division-sized ones. To this end, the light infantry division should retain its division structure, however the brigades within the division must be self-contained units capable of independent operations. In particular, the fire support available to the brigade should be organic.

Conditions for Employment. The light infantry must be employed in a low-intensity portion of the battlefield, regardless of the level of the overall conflict. It is a force "optimized" for low intensity conflict and as a result that is where it should fight. In a mid- to high-intensity conflict, these low intensity areas are best found in the near and far rear

and on the periphery of the main battlefield. An additional condition for the employment of light forces is that it must be capable of achieving surprise. A third factor is that the threat must be appropriate to the capabilities and training of the unit. A fourth factor is that the light infantry must be capable of seeking refuge, extracting or being relieved by heavier forces if the situation becomes untenable. A fifth requirement for the division is that it requires substantial fire support in situations such as that described in Crete where close air support and naval gun fire may be required. A final condition for the employment of the light infantry is that the initial insertion of the force must gain surprise, be unopposed or be protected. The initial insertion of this force is one of the most vulnerable points in its entire employment. As an example, the terrain requirements for the plane to deliver its light infantry cargo are diametrically opposed to the terrain requirements of the light force for survival.

Implications for Support. A final doctrinal implication for the light infantry division is that its employment must be logistically supportable. Systems and equipment which cannot accompany the force or cannot be supported must be removed from the divisional structure and replacements or alternative means of fulfilling that function found. If heavy artillery cannot be supported or inserted with the division, it must be removed. The same is true of engineer equipment which is too limited in quantity to be of significant use and too heavy or cumbersome to habitually accompany the force.

SECTION 5. CONCLUSIONS

The light infantry division has been and will continue to be a force multiplier when used operationally in a manner which is offensive, mobile and which makes the best use of its unique skills.

The light infantry has been optimized for the wrong mission. The light infantry division as currently configured is too heavy to adequately perform light infantry missions and is too light to perform regular missions.

The light infantry is a force apart from the regular infantry. It has a distinct focus, needs and capabilities. Augmentation with heavy equipment does not make it into regular infantry.

Light infantry division structures which have been carried over from the regular infantry division should be considered for deletion from the force structure. Specifically, the division artillery headquarters, the air defense battalion headquarters, and the engineer battalion headquarters should be considered for deletion.

The light infantry division requires enhanced intelligence and communications capability. Its force structure should be reviewed to determine skills and equipment it requires to determine skills and equipment it requires to operate in the enemy rear.

The total Army requirement for light divisions versus regular infantry divisions must be studied further. Four light divisions in addition to an airborne and an air assault division are seemingly in excess of what is needed for the employment of this type of force. A failure to have sufficient regular infantry divisions will result in a major force shortcoming and the improper substitution of light divisions to perform regular infantry missions.

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